Cell Biology

THE EFFECT OF THE NOTCH SIGNALING PATHWAY ON ADIPOGENESIS AND OSTEOGENESIS IN THE BONE MARROW CELL LINE 7F2

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The 7F2 cell line, isolated from the bone marrow of p53-/- mice, can be induced to differentiate into osteocytes or adipocytes. Previous research shows that both adipogenesis and osteogenesis are in some part regulated by Notch, a transmembrane protein. The role of Notch in the cell fate decision between adipocyte and osteocyte in this cell line can be determined by interfering with Notch signaling. This interference was achieved by exogenous expression of DN-CSL protein or α-sense CDN1 transcripts in 7F2 cells followed by incubation in induction media. Adipogenesis and osteogenesis were then monitored by Oil Red O and Von Kossa stains. Levels of Notch activity were analyzed by luciferase assay. Interference with Notch signaling was found to have no effect on the ability of 7F2 cells to undergo adipogenesis.